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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/466,174	12/17/1999	HIDENORI KAWANISHI	0717-0429P	9854

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EXAMINER

MENEFEE, JAMES A

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 02/21/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/466,174

Applicant(s)

KAWANISHI ET AL.

Examiner

James A. Menefee

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) 12-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☒ Claim(s) 3, 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 12 October 2001 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121. *Paul Ip*

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Paul Ip
Primary Examiner

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of group I, claims 1-8, in Paper No. 12 is acknowledged.

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 12 October 2001 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

Applicant is reminded that the Patent and Trademark Office no longer makes drawing changes and that it is applicant's responsibility to ensure that the drawings are corrected in accordance with the instructions set forth in Paper No. 7, mailed on 17 May 2001.

Claim Objections

Claim 3 objected to because of the following informalities: The word "in" in line 5 should read -is-. Appropriate correction is required.

Claim 7 objected to because of the following informalities: In line 1 after the word "device", the phrase –with a spot-size converter according to claim- should be added. Appropriate correction is required.

Claim 8 objected to because of the following informalities: In line 1 after the word "converter", the phrase –according to claim- should be added. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Paoli (US 5,228,049). Paoli discloses the claimed invention as follows (Figs. 2, 6 and discussion thereof):

Regarding claim 1, Paoli discloses a semiconductor laser device with a spot-size converter comprising a semiconductor substrate 20 having a semiconductor laser region 10 and a semiconductor layer 10' thereon, wherein the semiconductor layer 10' is a spot-size converter and the refractive index of the semiconductor layer 10' varies in a layer direction continuously or in a stepwise manner.

Regarding claim 2, Paoli discloses that the semiconductor layer 10' is formed such that the region having the highest refractive index is substantially consistent with a central portion of light distribution emitting from the semiconductor laser region 10.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli in view of Andrews (US 5,175,643). Paoli discloses all of the limitations of claims 1-2 as shown above, but does not disclose either a dielectric layer or another semiconductor layer having an approximately constant refractive index and provided on a boundary plane between the laser region and the semiconductor layer. Paoli does disclose a boundary layer 33 between these two regions without specifying what type of layer it is. The boundary layer is for separating the contacts of the two regions so that the regions may be individually biased (col. 4 lines 35-39). Andrews teaches an integrated laser amplifier structure similar to Paoli where there is a boundary 54 that may be a dielectric layer or a proton implanted semiconductor layer (col. 4 line 53 – col. 5 line 4). It would have been obvious to one skilled in the art to use a semiconductor layer or a dielectric layer as the boundary layer 33 of Paoli, as taught by Andrews, because it will perform the stated function of the boundary layer 33, as taught by Andrews.

Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli in view of Sanders et al (US 5,912,910). Paoli discloses all of the limitations of claims 1-2 as shown above, but does not teach that the device further comprises a light waveguide region at an opposite side of the laser region and facing the semiconductor layer. Sanders teaches as in figure 8 and the discussion thereof a MOPA where the output is coupled into a waveguide. It would have been obvious to one skilled in the art to include a waveguide region at the opposite side of the laser region and facing the

semiconductor region in the device of Paoli, as taught by Sanders, as this waveguide can be an oscillator causing the propagation of light, as taught by Sanders.

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Paoli and Andrews as applied to claims 3-4 above, and further in view of Sanders et al. Paoli and Andrews teach all of the limitations of claims 3-4 as shown above, but do not teach that the device further comprises a light waveguide region at an opposite side of the laser region and facing the semiconductor layer. Sanders teaches as in figure 8 and the discussion thereof a MOPA where the output is coupled into a waveguide. It would have been obvious to one skilled in the art to include a waveguide region at the opposite side of the laser region and facing the semiconductor region in the device of Paoli, as taught by Sanders, as this waveguide can be an oscillator causing the propagation of light, as taught by Sanders.

Response to Arguments

Applicant's arguments filed 12 October 2001 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP


§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Menefee whose telephone number is (703) 605-4367. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Paul Ip
Primary Examiner

JM
February 12, 2002